

REMARKSClaim Status

Claims 35-69 are pending in the application. Claims 54-68 were withdrawn by the Examiner as being drawn to a non-elected invention.

Priority

Certified English language translation of the foreign priority document is being filed concurrently herewith.

Rejection of Claims 35-38, 41-44, 48-49 and 69 under 35 U.S.C. §103(a)

Claims 35-38, 41-53 and 69 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sommermeyer *et al.*, International Application publication WO 2002/080979 (hereinafter "Sommermeyer"), the U.S. National stage of which is published as U.S. Publication No. US 2005/0063943, in view Wright E. D., EP 0 605 963 (hereinafter, "Wright"), as evidenced by the "WHO Food Additives Series No. 5." The Examiner applied same arguments presented previously to the new grounds of rejection and stated that stable esters can be formed in the reaction of HES, oxidised at the reducing end, with EDC and HOBt even in aqueous solvents, albeit at a lower yield.

Applicant respectfully disagrees with the Examiner. In support of Applicant's invention, attached hereto is a Declaration under 37 C.F.R. 1.132 (hereinafter, the "Declaration") by Dr. Klaus Sommermeyer, the sole inventor of the subject application. It is further noted that the declarant is also the sole named inventor in the Sommermeyr reference cited herein.

As shown in the Section 3 of the Declaration, Dr. Sommermeyer stated that the reaction of HES, oxidised at the reducing end, with EDC and HOBt according to example 2 of Sommermeyer was performed in an aqueous solution (paragraph [0147] of Sommermeyer) and that the reaction of HES, oxidized at the reducing end, with EDC and HOBt according to example 2 of Sommermeyer does not produce an "*isolated ester*", as claimed in Claim 35, since it is well known that such stable esters are only obtainable in anhydrous solvents. Under conditions disclosed in example 2, very reactive intermediate *O-acylisourea* will be formed and not an ester.

Furthermore, Dr. Sommermeyer stated that it is not just that under the conditions of example 2 of Sommermeyer the ester is not formed, but also the intermediate produced in the reaction of HES, oxidised at the reducing end, with EDC and HOBt, as described in example 2 cannot be isolated in even small amounts as the Examiner says. Therefore, contrary to the Examiner's allegations, example 2 of Sommermeyer does not disclose an isolated ester of an aldonic acid, as claimed in the Application. The secondary references do not remedy the deficiencies of Sommermeyer.

Therefore, in view of statements presented in the Declaration, rejection of Claims 35-38, 41-53 and 69 under 35 U.S.C. §103(a) over Sommermeyer, in view of Wright, as evidenced by the "WHO Food Additives Series No. 5." is moot. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are respectfully requested.

Rejection of Claims 35-38, 41-53 and 69 under 35 U.S.C. §103(a)

Claims 35-38, 41-53 and 69 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sommermeyer, in view of "Zero-Length Cross-linkers" by G. T. Hermanson, Bioconjugate Techniques, page 170-180, 1999 (hereinafter, "Hermanson"), as evidenced by Marder *et al.*, and as evidenced by the "WHO Food Additives Series No. 5."

Independent Claim 35 is non-obvious over Sommermeyer, for the reasons discussed above. Claims 36-38, 41-53 and 69 depend directly or indirectly on Claim 35, and therefore, are also non-obvious over Sommermeyer. The secondary references do not remedy the deficiencies of Sommermeyer. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are respectfully requested.

Rejection of Claims 39 and 40 under 35 U.S.C. §103(a)

Claims 39 and 40 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sommermeyer, in view of "Zero-Length Cross-linkers" by G. T. Hermanson, Bioconjugate Techniques, page 170-180, 1999 (hereinafter, "Hermanson"), as evidenced by Marder, and as evidenced by the "WHO Food Additives Series No. 5," as applied to Claims 35-38, 41-53, further in view of Gunja *et al.*, in view of Mau *et al.*

Independent Claim 35 is non-obvious over Sommermeyer, for the reasons discussed in the preceding section of this reply. Claims 39 and 40 depend directly or indirectly on Claim 35,

and therefore, are also non-obvious over Sommermeyer. The secondary references do not remedy the deficiencies of Sommermeyer. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are respectfully requested.

Rejection of Claims 50-53 under 35 U.S.C. §103(a)

Claims 50-53 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Sommermeyer, in view of Hermanson, as evidenced by Marder, and as evidenced by the “WHO Food Additives Series No. 5,” as applied to Claims 35-38, 41-49 and 69, further in view of Nozaki *et al.*.

Independent Claim 35 is non-obvious over Sommermeyer, for the reasons discussed above. Claims 50-53 depend directly or indirectly on Claim 35, and therefore, are also novel and non-obvious over Sommermeyer. The secondary references do not remedy the deficiencies of Sommermeyer. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are respectfully requested.

Double Patenting Rejection of Claims 35-38, 42-53, 69

Claims 35-38, 42-53 and 69 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 61-79 of co-pending application No.: 10/542,944 (hereinafter, “’944” application).

Applicant respectfully requests that the Examiner withdraw the rejection, provided that the claims of the instant application are otherwise in condition for allowance before those of the co-pending ’944 application.

Double Patenting Rejection of Claims 35-38 and 42-49

Claims 35-38 and 42-49 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 15 and 16 of co-pending application No.: 10/590,676 (hereinafter, “’676” application).

Applicant respectfully requests that the Examiner withdraw the rejection, provided that the claims of the instant application are otherwise in condition for allowance before those of the co-pending ’676 application.

Double Patenting Rejection of Claims 35-38, 41-53 and 69

Claims 35-38, 41-53 and 69 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-22 of co-pending application No.: 11/518,558 (hereinafter, “’558” application).

Applicant respectfully requests that the Examiner withdraw the rejection, provided that the claims of the instant application are otherwise in condition for allowance before those of the co-pending ’558 application.

Double Patenting Rejection of Claims 35-38, 41, 42 and 48-53

Claims 35-38, 41, 42 and 48-53 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-32 of U.S. patent No.: 7,115,576 (hereinafter, “’576” patent).

Applicant respectfully disagrees with the Examiner for the reasons discussed below. Claims 1-32 of the ’576 patent are directed to a water-soluble antibiotic derivative and a method for preparation of the water-soluble antibiotic derivative. Claims 35-38, 41, 42 and 48-53 are directed to an isolated aldonic acid ester of a polysaccharide, starch or a hydroxyalkyl derivatized starch. The isolated aldonic ester of the instant application is not an antibiotic derivative and would not be obvious in view of antibiotic derivatives of the Claims 1-32 in the ’576 patent.

In addition, instant invention, as claimed in Claims 35-38, 41, 42 and 48-53 has numerous advantages over the ’576 patent, as discussed below. The ’576 patent teaches coupling of pharmaceutical active ingredients in anhydrous aprotic solvents, such as DMSO. The teachings of the priority application DE 101 29 369 of the ’576 patent have been discussed in the paragraphs [0004]-[0005] of the instant application. As stated in those paragraphs, coupling of pharmaceutical active ingredients, specifically proteins, is often not possible in these solvents, either for solubility reasons or else on the grounds of denaturation of the proteins. In contrast, the present invention allows coupling reaction in the aqueous media, Examples 4-6, paragraphs [0078]-[0085] of the specification.

Based on all of the above, reconsideration and withdrawal of double patenting rejection of Claims 35-38, 41, 42 and 48-53 are respectfully requested.

**Information Disclosure Statement**

A Supplemental Information Disclosure Statement (SIDS) is being filed concurrently herewith. Entry of the SIDS is respectfully requested.

**CONCLUSION**

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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